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October 8, 2013

To: Mr. Bill Grant
Deputy Commissioner
Minnesota Division of Energy Resources
St. Paul MN

Dear Mr. Grant,

Reference: **Email dated Oct. 2, 2013 from Division of Energy Resources seeking stakeholder responses to Value of Solar in Minnesota**

We thank you for requesting responses after the 2nd Value of Solar Stakeholder meeting.

The Table of Value Components which was sent in the email is a very comprehensive list. We thank you for putting this comprehensive list. We wish to answer specific questions posed in your email.

(a) What value components not required by statute should be included or excluded and why?

To be included in the value table:

Values that we believe needs to be included that are not present in the table are incentives for

1. Solar innovation,
2. Innovative products that have intellectual property and
3. Small and disadvantaged business support.

To be excluded from the statute:

We are opposed to the Made in Minnesota CHAPTER 85--H.F.No. 729 Article 11 as it are written today. It must either be excluded in its entirety or provisions to include innovations in all aspects of solar must be included and not be narrowed to only UL 1703 certification.

(b) How should the value components (both required and not required) be calculated and why is this preferable to other approaches? Please be as specific as possible.

Solar innovation is continuous. This innovation can happen in several areas including new materials, design, application, etc. Innovation is one of the key forces for economic growth. Standards developed through NFPA and/or national and state agencies lag innovation. Standards respond to the market and new products introduced especially when the new product is innovative and unique. The value for innovation can be estimated to mirror typical R&D expense for a state investing in new technology.

Innovative products that have been granted intellectual property patents have clearly shown value and must be incentivized. All solar products that have such IP should be included in the value. All products individually and collectively that form the complete solar system should be included. The value we estimate should be equal to the estimate for "Made in Minnesota" incentives if it is included as a value.

Small and disadvantaged business support is critical to solar being successful in the State. The split between residential and large scale (commercial & utility) solar is almost split in the middle. The avoided transmission costs are mainly reinforced from residential scale solar. Residential scale solar due to its smaller size is serviced by small business than large businesses. A key to the residential solar penetration is the soft costs which are costs for interconnection to the utility. A more streamlined process is almost necessary for solar small business to be competitive with the large businesses in such residential scale solar implementation.

We are opposed to H.F.729 Article 11 because:

1. It very narrowly defines "Made in Minnesota"¹ to be only for UL 1703. UL 1703 is a standard only for solar panels. Solar photovoltaic systems use other components including inverters, racking, cabling, grounding, etc. The H.F.729 Article 11 ignores other components (and complete prefabricated systems) that are essential and contributes to the overall solar grid connected functioning of the solar system.
2. Standards always lag innovation. There are innovative products that do not (yet) have standards but have been successfully installed and deployed in multiple jurisdictions. Even certifying agencies have acknowledged the lack of specific standards to certify innovative products like the SolarPod™ Grid Tied.
3. The statute (H.F.729 Article 11) has specifically shown exclusion for comprehensive solar systems, in particular the language in H.F. 729 Article 11 includes "A solar photovoltaic module that is manufactured by attaching microinverters, direct current optimizers, or other power electronics to a laminate or solar photovoltaic module that has received UL 1703 certification marks outside Minnesota from UL, CSA International, Intertek, or an equivalent UL-approved independent certification agency is not "Made in Minnesota" under this paragraph."

The motivation for such exclusion is not known and seems unwarranted for the Minnesota solar industry to grow. Such exclusion language is detrimental to the Minnesota solar industry and stifles innovation. We respectfully request the Division of Energy Resources to carefully evaluate this exclusion language and remove it in its entirety.

4. There already are over 400 certified solar panel manufacturers² who have UL 1703 certification only in the USA. Almost 96% of this 400 USA UL 1703 certified manufacturers supply poly or mono crystalline silicon based solar panels.

¹ None of the two presently Made in Minnesota qualified companies (certified under the Xcel Energy Made in Minnesota program) would have qualified had the language in H.F.729 Article 11 been written just 2 years ago.

² http://www.gosolarcalifornia.ca.gov/equipment/pv_modules.php

The large competitive nature of the commoditized silicon solar panel manufacturing renders this industry with extremely thin margins, high risk and large capital. Such scenarios are not good for narrow (only UL 1703) economic growth incentives. Therefore the possibility of a solar panel manufacturer moving to Minnesota to set up manufacturing under such very narrow business conditions is very unrealistic.

And even if they move to Minnesota in anticipation of the incentives, they would move primarily for the incentive. When companies move based on such perennial need for incentive, it makes the industry less competitive, drive up higher local price than global price, lacks any local market economic innovation and poor return on investments.

(c) What is the estimate of the value components' expected value range in \$/kWh.

Products that have already proven to show innovative promise in any area of solar (components through system level) should be included and not excluded from the "Made in Minnesota" incentives. This promise is authenticated by intellectual property obtained through USPTO or other means deemed appropriate and finds to hold objective and unbiased innovative scrutiny.

Any solar component and / or system that have shown market innovation must be included in all of the Made in Minnesota incentive programs and mirror the incentives proposed for that value.

Small and disadvantaged business support has been given typically anywhere from 7% through 20% value in many projects. A similar level of incentives is suggested.

(d) Are there other categories not on the table that should be included? If so, answer questions (a), (b), and (c) above.

Values that we believe needs to be included are incentives for (1) solar innovation, (2) innovative products that have intellectual property and (3) small and disadvantaged business support. We think none of these have been addressed in the statute. All of these three are self-evident as outlined in the above paragraphs in their need for the value to be included into the comprehensive list.

Thank you.

Sincerely

s/Mouli Vaidyanathan

President